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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,313

12/18/2001

Kazuhisa Fujimoto

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09/18/2006

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,313

Applicant(s)

FUJIMOTO, KAZUHISA

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-48 and 56-89 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-48 and 56-89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Interview Summary</u> . |

Claim Status

Claims 35-48 and 56-89 are pending; claims 1-34 and 49-55 having been cancelled.

Claims 35-48 and 56-89 are rejected as detailed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35-48 and 56-89 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 35 recites:

a physical input/output port to be coupled to the IP network

the physical input/output port accessible by a block I/O request having a first port number

the physical input/output port accessible by a file I/O request having a second port number

A person skilled in the art would not be able to make and use the present invention without undue experimentation because the specification does not include the following:

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(1) The specification does not disclose a single physical input/output port which is coupled to the Internet. Figures 1, 4, 5, 7 and 8 disclose eight(8) ports and Figures 6 and 13 disclose four(4) ports.

(2) The specification does not disclose how to assign two different port numbers to a single physical input/output port.

(3) The specification does not disclose the difference between file-based I/O blocks and block-based I/O blocks. It is particularly unclear from the specification what comprises blocks which are not associated with file-based I/O blocks. Are these block-based I/O blocks single stand-alone blocks since they appear not to be associated with a larger entity such as a file, document or application program?

(4) The specification does not disclose how Internet traffic is divided into two categories, i.e., block-based and file-based. Furthermore, examiner maintains that files are transmitted in blocks (packets) over the Internet and thus are essentially block-based. Therefore, the difference, if indeed any, between file-based I/O blocks and block-based I/O blocks is not clear from the specification.

Claim 35 recites "wherein said block I/O request and said file I/O request and sent from different host computers." The above limitation is not supported in the specification.

Claims 42 and 56 include language similar to claim 35 and are rejected on the same basis as claim 35.

Claims 36-41, 43-48, 57- 89 are rejected for being dependent from a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-48 and 56-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,748,448 issued to Barrera et al (hereafter Barrera), in view of US Pat No 6,606,630 issued to Gunlock (hereafter Gunlock) and further in view of US Pat No 5,991,542 issued to Han et al (hereafter Han), as best examiner is able to ascertain.

Claims 35, 42, 49 and 56:

Barrera discloses:

- a physical input/output port coupled to the IP network [Fig 3, 108, col 8, lines 30-40]
- a control unit coupled to the physical input/output port [Fig 3, 102, col 8, lines 30-40]
- a plurality of disk drives coupled to the control unit [Fig 2, 64, col 6, lines 40-53]

Barrera discloses the essential elements of the claimed invention as noted above but does not disclose the physical input/output port being accessible by a block I/O request having a first port number via the IP network and a file I/O request having a second port number via the IP network. Gunlock discloses a program references files is storage by passing a command block to an operating system. At this level, the command block may reference files by name. The operating system passes block I/O requests from the command block to an appropriate driver.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Barrera to include the physical input/output port being accessible by a block I/O

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request having a first port number via the IP network and a file I/O request having a second port number via the IP network based on the teachings of Gunlock for the purpose of providing a means for transferring single packets and a means for transferring multiple packets [White, col 11, lines 53-65].

The combination of Barrera and Gunlock discloses the essential elements of the claimed invention as noted above but does not disclose wherein the plurality of disk drives are configured into a plurality of volumes, of which a first volume is assigned to store data related to the block I/O request and a second volume is assigned to store data related to the file I/O request. Han discloses partitioning a storage volume into block volumes and file contents volumes [Fig 2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Barrera and White to include wherein the plurality of disk drives are configured into a plurality of volumes, of which a first volume is assigned to store data related to the block I/O request and a second volume is assigned to store data related to the file I/O request based upon the teachings of Han for the purpose of simplifying access and thus reducing access time.

Furthermore, the combination of Barrera, Gunlock and Han discloses when an I/O request received at the control unit via the physical input/output port is the block I/O request including the first port number, the control unit performs a first operation, corresponding to the first port number for storing data in the first volume [White, col 11, lines 53-65]

Furthermore, the combination of Barrera, Gunlock and Han discloses when an I/O request received at the control unit via the physical input/output port is the file I/O request including the

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second port number, the control unit performs a second operation, corresponding to the second port number for storing data in the second volume [White, col 11, lines 53-65]

Furthermore, the combination of Barrera, Gunlock and Han disclose wherein said block I/O request and said file I/O request are sent from different host computers [Gunlock, Fig 1]

Claims 36 and 43:

The combination of Barrera, Gunlock and Han discloses the elements of claims 35/42 as noted above and furthermore discloses wherein the block I/O request has an IP packet that includes the first port number and first information including an address in the first volume [White, col 7, lines 25-35]

Claims 37, 44 and 58:

The combination of Barrera, Gunlock and Han discloses the elements of claim 35/42/56 as noted above and furthermore discloses wherein the file I/O request has an IP packet that includes the second port number and second information including file data [White, col 7, lines 25-35]

Claims 38, 45 and 57:

The combination of Barrera, Gunlock and Han discloses the elements of claim 35/42/56 as noted above and furthermore discloses wherein the block I/O request has a TCP packet in which the first port number is included [White, col 11, lines 50-65]

Claims 39 and 46:

The combination of Barrera, Gunlock and Han discloses the elements of claims 35 and 36 as noted above and furthermore discloses wherein the IP packet encapsulates a TCP packet in which the first port number is included [White, col 11, lines 50-65]

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Claims 40 and 47:

The combination of Barrera, Gunlock and Han discloses the elements of claim 35/42 as noted above and furthermore discloses wherein the first volume and the second volume are concurrently assigned [Han, Fig 2]

Claims 41 and 48:

The combination of Barrera, Gunlock and Han discloses the elements of claims 35/42 as noted above and furthermore discloses wherein the control unit maps relationships between logical addresses of the volumes and physical addresses of the disk drives to which data is to stored [Han Fig 2]

Claim 59:

The combination of Barrera, Gunlock and Han discloses the elements of claim 56 as noted above and furthermore discloses wherein the control unit transforms the file data into block data for storing in the second volume [Han, Fig 2]

Claims 60-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Barrera, Gunlock and Han and further in view of Pub No 2002/0112022 issued to Kazar et al (hereafter Kazar), as best examiner is able to ascertain.

Claims 60, 62 and 64:

The combination of Barrera, Gunlock and Han discloses the elements of claim 35/42/56 as noted above but does not disclose wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the NFS protocol. Kazar discloses the NFS protocol [paragraph2]. It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to modify above combination of references to include wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the NFS protocol based on the teachings of Kazar for the purpose of complying with normal NAS file servers [Kazar, paragraph 2].

Claims 61, 63 and 65:

The combination of Barrera, Gunlock and Han discloses the elements of claim 35/42/56 as noted above but does not disclose wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the SCSI protocol. Kazar discloses the SCSI protocol [paragraph2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify above combination of references to include wherein a format of file I/O related to the file I/O request is on the basis of SCSI protocol, and the second operation is performed on the basis of the SCSI protocol based on the teachings of Kazar for the purpose of complying with normal NAS file servers [Kazar, paragraph 2].

Regarding claims 66-89, examiner maintains that such claims can be rejected on a similar basis to the above.

Response to Arguments

Applicant's arguments filed 7/31/2006 have been carefully considered but are not persuasive for the reasons states below:

Applicant Argues:

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Applicant states in the first paragraph of page 18 the following:

The examiner's attention is also directed, by way of example to paragraph (0160) of corresponding publication No. 2002/0178143 in which the processing of input data packets according to a port number specified in the TCP packets is described.

Examiner Responds:

Examiner is not persuaded. Applicant positively fails to address the essence of the 35 U.S.C. 112 first paragraph rejection. The rejection concerns the following limitation:

the physical input/output port being accessible by a block I/O request having a first port number via the IP network and a file I/O request having a second port number via the IP network.

Careful reading of the above limitation will convince one of ordinary skill in the art that Applicant is claiming a first port number and a second port number for the physical input/output port. this is the basis of the rejection under 35 U.S.C. 112 first paragraph. How can a single physical input/output port be assigned two different numbers.

In fact, Applicant fails to address this point because applicant says above "according to a port number specified in the TCP packets is described. Examiner fails to understand how "a port number" can simultaneously be a "first port number and a second port number."

Furthermore, referring to paragraph 160 is applicant's specification the following is given:

[0160] The block data and file data input/output means processes the input data packets according to the Internet Protocol requires and determines whether the packets contain block data or file data bases upon the port number specified in the TCP packets encapsulated in the Internet Protocol compliant packets.

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Above paragraph 160 does not include a first port number and a second port number, in fact paragraph 160 include “the port number.” The rejection under 35 U.S.C. 35 first paragraph is sustained.

Applicant Argues:

Applicant states in the second paragraph of page 19 that White does not disclose block and file data.

Examiner Responds:

Applicant is referred to above Office action which explains that White discloses (1) block data and (2) block data suitable for file transfer.

Applicant Argues:

Applicant states in the second paragraph of page 18 that file-based I/O blocks and block-based I/O blocks are notoriously well known in the art.

Examiner Responds:

Examiner is not persuaded. Examiner maintains most modern computer networks are packet oriented (refer Gunlock, column 1, lines 25-30). Furthermore, regarding the specification paragraphs [0088] – [0100], examiner maintains above paragraphs describe the network storage devices and do not particularly define a block I/O request and a file I/O request.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached on Monday through Friday, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

9/14/2006



Primary Examiner